**Choose Your Own Adventure! Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Q4 Interim Review Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Pr: \_\_\_\_\_\_**

You MUST complete the problem sets for the TWO LOWEST sections on your Q4 Interim Review HW. These problems will count as part of your participation grade for the day. Any extra problems you complete will be considered for extra credit. Good luck!

**I. Number properties**

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| 1) Two numbers are reciprocals if their product is 1. If m and n are reciprocals and -1 < m < 0, then n must be:  A. less than -1  B. between 0 and -1  C. equal to zero  D. between 0 and 1  E. greater than 1 | | 2) Danny is buying groceries at the store and if he spends more than $20, he will be able to use his 15% off coupon. If he buys 2 cartons of milk for $3.99, 4 boxes of cereal for $2.35, and a gallon of ice cream for $4.95, what is his total bill at the register? | |
| 3) For what values of *a* is  an integer?   1. All even values 2. All odd values 3. All positive values 4. All negative values | | 4) If a > 0 and b < 0, which of the following must be true for the value of b – a?  A. b – a > a  B. b – a > 0  C. b – a > b  D. b – a < ab  E. b – a < b | |
| 5) A locker combination consists of three numbers between the digits 0 – 10. Each number may only be used once in the combination. How many different combinations can be made? | | 6) If a > 0 and b < 0, which of the following statements is true?   1. a + b > a 2. a + b < a 3. a + b > 0 4. a + b < 0 5. a + b < b | |
| 7) If x 0, which of the following has the least value?   1. x + 2 2. x 3. x2 4. x3 5. 1 – x | 8) Which of the following calculations will yield an odd integer for any integer *n*?   1. n2 2. 2n2 3. n + 1 4. 3n2 + 1 5. 2n2 + 1 | | 8) If *m*>0 and *p*<0, which of the following is always true?  A.  B.  C.  D. |

**II. Trig, Triangles, & Special Figures**

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| 1) What is the tangent of B in the triangle below?  A  8  10  C  B | 2) KL is parallel to GH. Find the value of JH. |
| 3) You have an extension ladder that you are using to repair a chimney. Which of the following is a trig ratio that could be used to find the length required for the extension ladder to reach a height of 14 ft for the chimney?   |  |  | | --- | --- | | A.  B.  C.  D.  E. |  | | 4) If Quadrilateral 1 has two sets of parallel sides and Quadrilateral 2 has congruent diagonals, which of the following must also be true?   1. Both shapes are rhombuses 2. Both shapes are trapezoids 3. Both shapes are parallelograms 4. I only 5. II only 6. III only 7. I and III only 8. None of the above |
| 5) Find the length of side x in the isosceles right triangle below. Leave your answer in radical form.  12 ft.  x | 6) One diagonal of a rhombus is 8 cm long and the other diagonal is 6 cm long.   1. What is the length of one side of the rhombus? 2. What is the perimeter of the rhombus? |
| 7) In the figure below, lines PQ and TS are parallel, and lines QS and PT intersect at point R. The measure of PRQ = 44 and the measure of P = 27. Find the measure of T. | 8) The area of the face of a cube is 100 cm2. Which of the following is the volume of the cube, in cubic centimeters?   1. 10 2. 100 3. 1,000 4. 10,000 5. 100,000 |

**III. Area & Perimeter**

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| 1) In the figure below, adjacent sides meet at right angles and the given lengths are in centimeters. What is the perimeter of the figure in centimeters?  perimeters | 2) A park wants to put a fence around a baseball field in the shape below. Each straight side of the fence is 110 feet long, and the rounded side is an arc that measures 90 degrees. How many feet of fencing does the park need to purchase? Leave your answer in terms of pi. |
| 3) The perimeter of a rectangle is 72 inches. The width is unknown. The length is two times longer than the width. Find the area of the rectangle. | 4) Brandon is going to cover his bathroom with tiles, and he plans to put the tiles next to each other so there is no space in between them. The tiles are rectangular prisms that are 4 in tall by 3 in wide by 6 in long. If Brandon’s bathroom is a rectangle that measures 4 feet by 8 feet, what is the minimum number of tiles he will need to fully cover his bathroom floor? |
| 5) A square and a semicircular region have the same perimeter. If the length of the radius of the semicircular region is 12, what is the length of one side of the square? Leave your answer in terms of pi. |
| 6) An 8-foot-by-4-foot garden space is increased by 3 times. If the 8-foot side is increased by 4 feet, how many feet must the 4-foot side have been increased?   1. 3 feet 2. 4 feet 3. 8 feet 4. 12 feet 5. 96 feet | 7) In the figure below, Q, R, and S are collinear. If the measure of PQR is 31 and the measure of PRS is 58, what is the measure of QPR? |

**IV. Algebra, Conversions, Coordinate Plane**

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| 1) A traveling salesman lives in Appleton, but needs to go to Bloomington and Charlottesville. His map indicates that 2 centimeters is equal to 100 miles. If Bloomington is 200 miles away from Appleton, and Charlottesville is 360 miles away from Appleton, how much further is Charlottesville than Bloomington on the map? | 2) The editor of a newspaper reduces the size of a photograph so that it will fit in this month’s column. If the picture was originally 1 meter wide but is reduced to 3 centimeters in the newspaper, what is the scale factor of the original to the newspaper photograph?   1. 1:3 2. 3:1 3. 100:3 4. 3:100 5. 300:1 |
| 3) In the standard (x, y) coordinate plane, AB has endpoints A (5, -3) and B (-1, -1).   1. What is the slope of the line AB? 2. What is the midpoint between points A and B? 3. If the midpoint has the coordinates (x, y), what is the value of x – y? | 4) At Java Joe’s Coffee Shop they sell 5 flavors of coffee, offered in small, medium, or large sizes. Each coffee can be purchased with or without whipped cream and with or without caffeine. One Muchin teacher has committed to ordering her coffee a different way each day before school. How many five-day work-weeks would it take for this teacher to try every combination offered by Java Joe’s? |
| 5)In the standard (x, y) coordinate plane, a line has the equation 4x + 2y = 8.   1. At what coordinate point will this line cross the y-axis? 2. At what coordinate point will this line cross the x-axis? | 6) Solve for m. |
| 7) Solve for m. |